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FINAL SCIENTIFIC REPORT

AIR FORCE GRANT AFOSR-84-0102

GORDON RESEARCH CONFERENCE ON ORGANOMETALLIC CHEMISTRY

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GORDON RESEARCH CONFERENCE ON ORGANOMETALLIC CHEMISTRY

AIR FORCE GRANT AFOSR-84-0102

✓ The financial support of the Air Force Office of Scientific Research was greatly appreciated in the organization and presentation of this conference. The additional funds provided by AFOSR allowed the assembling of an outstanding group of speakers. In particular, it provided sufficient incremental funds to support travel for speakers from greater distances and allowed us to extend invitations to internationally recognized speakers from Canada, England, France, Hungary, and Japan. > 682

The conference was very successful and included 122 participants. The topics covered many areas of current activity in organometallic chemistry and a program summary is given on the following pages. The discussions were stimulating and I was pleased to receive numerous personal comments, as well as letters, complementing the organizing committee on the program.

Jw Faller

FINAL PROGRAM
GORDON RESEARCH CONFERENCE ON ORGANOMETALLIC CHEMISTRY
August 13-17, 1984, Proctor Academy, Andover, N.H.

Chairman: Jack Faller, Yale University
Vice Chairman: Duane Dombek, Union Carbide

→ *to top included*
SESSION 1. Bonding and Reactivity in Organometallics
Discussion leader: R. McKinney DuPont

Some Problems in Acetylene Metathesis,
Thomas Albright Houston

→ Bimetallic Clusters)
Joseph Lauher SUNY, Stony Brook

→ Electron Transfer and Reactions of Organometallics
Didier Astruc Bordeaux

SESSION 2. Stereochemistry and Mechanisms
Discussion leader: Jack Faller Yale

Asymmetric Catalytic Allylation
Brice Bosnich Toronto

Mechanisms of Coenzyme B₁₂-Promoted Reactions: Organometallics
as Free Radical Precursors
Jack Halpern Chicago

SESSION 3. Alkane Activation by Homogeneous Systems
Discussion leader: Jennifer Quirk Union Carbide

From Alkanes to Transition Metal Hydrido Alkyls
William Graham Alberta

C-H and C-C Bond Activation in Alkanes
Robert Crabtree Yale

Oxidative Addition of Alkane C-H Bonds to Complexes of Rh and Ir
Robert Bergman UC Berkeley

SESSION 4. Oxidation in Systems with Metal-Carbon Bonds. (JY) ~~←~~
Discussion leader: James Lyons SunTech

Ligand Mediated Oxygen Atom Transfer: Oxidation of Alkanes
Mark Andrews Brookhaven

Reductive Activation of Dioxygen for Catalytic Oxidation of
Hydrocarbons using Transition Metal Complexes
Brian James British Columbia

SESSION 5. Reactions In Metal Clusters and Multiply Bonded Systems

Discussion leader: Phillip Garron Dow

N-H Bond Formation in Nitrido and Nitrosyl Metal Clusters
Wayne Gladfelter Minnesota

The Road from Acetylenes to Metal to Carbon Multiple Bonds
Michael Green Bristol

Sulfided Bimetallic Clusters Incorporating Early and Late Transition
Metals: Unusual CO Hydrogenation Catalyst Precursors.
M. David Curtis Michigan

SESSION 6. Catalysis with Lanthanide and Actinide Systems

Discussion leader: John Gilje Hawaii

Recent Developments in Organolanthanide Catalysis
Patricia Watson DuPont

Ligand Substitution and Electron-Transfer Processes of
Uranium(III) Metallocenes
R. Andersen UC Berkeley

SESSION 7. Organometallics in Organic Synthesis

Discussion leader: Howard Alper Ottawa

Transition Metal Organometallics in Organic Synthesis
Anthony Pearson Case Western

The Activation of Alcohols and Amines with Transition Metal Complex
Catalysts
S-I Murahashi Osaka

Two-electron, Three-Center M---H---C Bonds and Their Relationship
to Alkyl Insertion Reactions
M. Brookhart North Carolina

SESSION 8. Advances in Main Group Organometallics

Discussion leader: David Singleton Shell

Compounds with Multiple Bonding Between Main-Group and
Transition Elements
Alan Cowley Texas, Austin

The Influence of Bulky Ligands in Organo-group 3 Chemistry
O.T. Beachley SUNY, Buffalo

SESSION 9. Catalysis by Organometallics

Discussion Leader: Duane Dombek Union Carbide

Mechanistic Aspects of Transition Metal Catalyzed Carbonylation
Reactions
A. Sen Pennsylvania State

New Aspects of the Iridium Complex Promoted Oxidative Addition
of H-H and C-H Bonds
R. Eisenberg Rochester

Hydrogenation of C=O and C=N Bonds using Cr, Fe, Co and Rh
Complexes as Catalysts
Lazlo Marko Hungary